567 have been freed as a group as a reward for some outstanding action. Nicolas mentions the present Tamjert fraction in the center of Tahoua who were freed after the battle of Izerwan where they had courageously resisted the Kel Ahaggar (1898). Many Iderfan go back to cultivation. They often live with the sedentary groups, with whom they join forces. They do small services for the latter, such as tending their flocks.

114 563 567 Nicolas likens them to the Harratines of the Kel Ahaggar. This is only partially justified, for, although it is true that a few former slaves work in the centers of cultivation of the Ahaggar, the majority of the Harratin are Negroes from the Tidikelt who freely came to get jobs among the Tuareg. Thus, we must not confuse the Harratin with the Iderfan.

567 As in the case of the Iklan-n-Egef, there are no Iderfan in the Ahaggar except in isolated cases.

564 The Enaden. -- The Enaden (singular, Enad) form the artisan class of the Tuareg. In the Sudan they are called /174/ garassa or gargassa, which is very probably of Sonrhaï origin.

[192] The word Enadan probably comes from enad, meaning "the other," extended to mean "those we don't talk about." (1) This is

1. Nicolas, op. cit., pp. 579-586.

because the Enaden form a closed caste, scorned and cursed by the Tuareg whose repulsion for manual labor is well known.

463 564 Their role is to manufacture anything the Tuareg may have need of: weapons, wooden table utensils, tent pegs, mehari saddles, and harnessing articles.

[757] 752] In addition, they also willingly engage in the business of barber-surgeon, and with the little instruments they make they adroitly do bloodletting, cupping, scarification, and other little operations of the same order, including tooth extraction. They are remunerated [465] for their work when they work for tribes, or, if they are attached to a master, he has them entirely at his disposal.

264 [415] The Tuareg use spoons. The use of this implement is peculiar to them, for their Arab or Negro neighbors eat with their hands. The custom must be related to the wearing of the veil, which they do not take off to eat and which prevents them from putting their [182 291] hands full of food to their mouths. They carry food to their mouths while slightly holding up the ends of their veils.

[271 272] For beverages they drink only water, whether it is clean or polluted, and milk.

For half a century they have had the habit of drinking green tea in the Arab manner; they aromatize it with mint or some perfumed plants of the Ahaggar, /238/ chih (Artemisia herba alba) in particular. Coffee, which was formerly much used by them, is now [757 778] taken mainly as a medication to calm violent coughs or stomach aches.

276 If we now seek consumer goods taken as stimulants or narcotics, we see that the Tuareg know only tobacco, which they chew or take as snuff.

Smoking is not one of their customs. The young men who are [177] in contact with the French like to beg a cigarette, but it is simply in the spirit of imitation.

114 276 Duveyrier, however, has said that the Tuareg smoke. Was this, perhaps, the fashion among the Tuareg who visited Ghat? Before him Barth wrote that all riverain people living along the Niger loved to smoke. "It is very seldom that they leave their pretty little clay pipes, and all the Rouma, like the Tuareg, cover their mouths when smoking, so that all one sees is a pipe bowl coming out of the shawl which covers the face." (1)

1. Voyage en Afrique, vol. IV, p. 137.

302 For festive occasions, some women bear paintings on their faces, white or ocher dots above the bridge of the nose, under the [517] cheeks, and on their chins. These paintings have only an aesthetic nature, or so it seems.

304 All Tuareg, men and women, have two or three small linear 751 scars on their foreheads and temples, and the indigo from their clothing which is often inlaid there gives them the appearance of tattoos. They are incisions made for medico-magic reasons when [855] the children are very young to protect them from headaches and convulsions.

[856] It also seems that this custom contributes to make them strong and making them walk very early. (1)

1. De Foucauld, Textes en prose /Prose Texts/, p. 64.

757 Medicine and surgery. -- If we now turn our attention to medicine and surgery among the Tuareg, we shall observe that their knowledge is not very extensive and has nothing singular about it.

753 In their minds the Tuareg classify sickness in two categories: those which are the result of an external action, visible and determinable, and those whose origin cannot be explained by any causal link. The former are treated with appropriate medical treatments, the latter by magic procedures.

757 The medical procedures, which belong rather to surgery, are clearly empirical. A few of them serve for a quantity of ills. They chiefly include bleeding and applying heat. In bleeding, the operator relieves congestion in the diseased part; in applying heat, he limits the pain, at the same time relieving congestion.

278 The Ihaggaren have a whole stock of drugs which they [777] borrowed from the Sudanese. These are roots, plants, and seeds which grow in the Sudan and in which the Tuareg have a great deal

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1. Dr. Foley, Moeurs et médecine des Touaregs de l'Ahaggar /Mores and Medicine among the Ahaggar Tuareg/, p. 85.

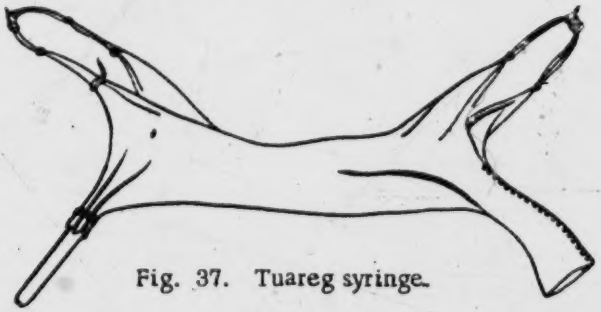

Fig. 37. Tuareg syringe.

752 The warlike and eventful life of the Tuareg exposes them to
[278] many wounds or accidents. They care for war wounds by sprinkling the wound with sugar or smearing it with plasters of vegetable origin, chopped leaves of the Zizyptus lotus, or ground resin of the Balsamodron africanum. Sometimes they pour butter on it, and if the wound is infected they apply plasters of butter and ashes of aferegak (Chrozophora brocchiana).

But we have been able to observe that the use of this ash was of no great efficacy, that the wounds took a very long time to heal, and that in many cases they preferred to call on a European doctor.

Fractures are cared for with absolutely the same methods as those used by our European doctors. The fractured member, after being set, is coated with a flour plaster, furnished with a little cushion of goat hair, and braced by means of splints made of wooden boards attached to a sheepskin and kept in place by leather cords.

/263/ We have never seen any amputation among the Tuareg, and we do not know whether or not they know how to do it.

757 The Tuareg also know the use of enemas. The apparatus is
413 made of a sheep's bone, one end of which has been rounded and
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polished and whose other end is inserted in a small goatskin water bottle which holds the liquid to be injected. During the operation one presses on the bag so as to make the liquid penetrate, while the patient has his head down and his feet attached to a tree. The enema is generally composed of water, butter, and ground afasso roots. When it is a question of giving an enema to a young child, the mother fills her mouth with water and, putting her lips against the anus, blows the liquid with all her might.

/264/ Chapter 8

Dress. Adornment.

Clothing. -- The portrait of the Tuareg is now well known. Draped in a long, dark-colored blouse, belted at the waist, and with his head surrounded by a black veil placed in the shape of a haumier /?/, he makes a silhouette as majestic as it is mysterious when he is mounted on his slender mehari. Hanging from the saddle, as well known as the man, is the broad antelopeskin buckler.

The Tuareg, even though they are poor, are very natty. Although they have only sordid rags, they always are able to wear them with good taste and to keep a proud and dignified attitude under all circumstances.

The costume for men is the same in all confederations. It is made up of: 1) a very full pair of trousers, drawn in at the waist by a cord of braided leather; the leg is nipped in at the instep /sic/ and blouses over it so that it sometimes drags the ground; 2) a big, very full blouse, formed of a rectangular-shaped piece of cloth, sewn by a stitch at the four corners, and provided with an opening in the middle to let the head go through; it descends to the knees

claim that this blue tint is excellent for the health. As in the Tidikelt, a white garment is not fit to wear until it has been sufficiently tinted blue by contact with "chegga."

The Tuareg value our medicines, "asafar" ⵓⵙⴼⴰⵔ plural "isefran" ⵉⵙⴼⵔⴰⵏ, and believe in their efficacy. This is also due to the fact that they are given to them free, for under no circumstances does the Tuareg like to loosen his purse strings, and he never ceases to beg for anything he sees that he hopes to get for nothing.

However this may be, it is good to note that he comes very willingly to be treated by us. A French doctor would certainly be very well received by the Tuareg.

The most usual diseases among them are fever, "tazzaq" ⵜⴰⵣⵣⴰⵇ, gonorrhea, "talaoaït;" rheumatism, "tessemdhi" ⵜⵙⵙⵎⴷⵀⵉ; and headaches, "tekmou-n-ir'ef" ⵜⴽⵎⵓⵏⵉⵔⵄⴼ.

Chapter XVII

Negroes and Negresses

There is no Tuareg tent which has not at least its negro and negress. The frequent raids that the Ahaggar made in the Niger and in the Sudan procured them all the slaves they have.

They devoted themselves greatly to the Negro trade, which brought them fine profits since they had only to take the negroes without expense.

The conquest of the Sudan and the Saharan Oases gave them a terrible blow from that standpoint. Besides, with the progressive pacification of their territory and that of the neighboring tribes subject to them, they would soon have to renounce all hope of new raids, and one may say that the Negro trade, if not entirely destroyed, will at least be considerably diminished.

164 /110 cont./ The country then is sufficiently free of serious
114 diseases; one scourge, however, must be noted: malnutrition, described and well studied by the doctor, Captain Galan, in a publication of the Pasteur Institute of Algeria: Contribution à l'étude du problème alimentaire au Hoggar /Contribution to the Study of the Nutrition Problem in the Ahaggar/.

757 The Tuareg and the Negroes are beginning to like
278 European medication and are coming more frequently to the infirmary; they value above all aspirin, quinine (which is becoming a generic term for all pills), and penicillin. They remain faithful to their pharmacopoeia, chiefly based on plants, of which here are several examples:

Pulmonary diseases: strong pimento and rellachem /see Appendix, Flora/ are specifics; for pleurisy, one must melt camel fat with the ta'noust (fruit of the acacia), eat it as hot as possible, and constrict one's chest with a rope.

For the stomach, butter mixed with tahist.

In cases of diarrhea, takamezout is the sovereign remedy, taken in tea or eaten in leaf form. This takamezout has a great reputation among the Tuareg: it comprises, they say, 40 remedies, but will not heal broken legs.

Constipation is vanquished by adjardjar and taharadjelle. Headaches have no remedy, yet tea is /111/ to be taken in preference to anything else. The liver is treated with ihemhad taken in milk. The victim of ganglions at the groin or under the armpit may easily make them disappear by rubbing them lightly with saliva very early in the morning; another method, more efficient, consists of heating goat dung and placing it on the nails of the affected member.

[752] For an open wound, make a plaster with milk and powdered tassa.

Rheumatism is easily treated; a sort of well is dug, one meter in diameter and 1.50 meters deep, the patient gets in it, a cover is put on the well, and the patient is given an infusion of ofaq to make him sleep. A spring called In-Ahadja exists which is supposed to be equally as good in treating rheumatism.

757 /111 cont./ Jackal meat, eaten with decoctions of
278 reliachem for three days, is the best remedy for gonorrhea; cloves will aid in the healing.

Jackal meat is also used to cure syphilis, but in addition in the morning one must drink milk in which colocynth has been soaked; while this milk is being drunk, skewers of fat to be eaten afterward are cooked; clear soup is drunk during the entire day. After three days small, white granulations are seen in the stools, indicating the success of the treatment.

Smallpox formerly was treated in a sufficiently efficacious manner by digging a hole in the sand and heating it as if to make méchoui /roasted sheep/, although not so hot; the patient then lay in the hole and was covered with sand. After that there was nothing to do but wait.

The treatment for measles requires the patient to be kept warm, while eating hare, gazelle, or wild sheep meat.

Toothaches cannot last when treated as follows: fill the mouth with onion seeds, ouzouaz, wheat, and salt; keep these medicaments in the closed mouth for half an hour. When adolescents break out in pimples, which disfigure them, it is essential that /112/ onion seeds be burned and the smoke inhaled, which, it is said, makes all the worms leave immediately. Around a boil, apply a paste made of milk and powdered tanzet (a kind of Sudanese bean).

Magic Rites

789 This is a very difficult subject to treat, for the secrets
754 are jealously guarded by those who possess them and want to profit from them, or are carefully hidden by those who know them in a disinterested fashion but who lack confidence in their questioner or fear reprisals.

The Ahaggar, situated at the frontiers of Islam and the black world, is without doubt impregnated with magic customs; the superficial Islamism of the population, which retains an

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household goods during nomadic migrations, and are employed daily in all camps to carry water in skin-bags from wells and waterholes to the tents. They are very strong animals considering their low stature, and good pack-donkeys can carry up to one hundred kilograms even for very long trips. Donkeys are occasionally used for long journeys by the Northern Tuareg, and many Ayr Tuareg use them to fetch provisions of millet around Tanut in Damergu. Caravans of donkeys are frequently observed in these regions, and one even sees mixed caravans of donkeys and camels. There can be no doubt that before the introduction of the camel the donkey was still more important for riding and transportation than is the case nowadays. This is clearly demonstrated by historical material from Egypt and adjacent regions (cf. Erman 1922, p. 518 f., 529, 592 f., 636).

It has already been mentioned that donkey's meat and skin are not utilized nowadays by the Tuareg. The same is true of mare's milk which, however, is used as a remedy against a kind of cough known to the Ayr Tuareg as *khamkham*. There is no regulation of mating for donkeys which in many ways are semi-domesticated animals. In Ayr male donkeys are never castrated, while the Ahaggar Tuareg say they castrate such stallions as constantly run after the mares and in this way cause too much trouble. The Tuareg also have no methods to prevent foals from sucking, while a method of this kind is sometimes applied by sedentary people in and around Agadez. This method known as *éfinjar* consists in the cutting of the nostrils of half-grown foals so that they cannot suck pregnant mares. Both stallions and mares are used for riding and transportation, but female animals are much preferred for these purposes. Mares are used almost exclusively for the transportation of water-bags hanging under the animals, as the bags might be squirted by stallions' urine.

The Northern Tuareg saddle their donkeys, using the same saddle type for riding and for transportation (Fig. 86). This is known as *aruku* and is manufactured by the women in the following way:— Two fresh boughs of the *tahunek*-tree (*Rhus oxyacantha*) are heated, or slightly burned, over the fire. The boughs are thereupon barked and bent into the curved form wanted, and are then kept in this position by cords. After drying for a few days the boughs will retain their curved form, and the cords are untied. The boughs are then cut up and their ends are connected by two pieces of camel's hide soaked in water, and sewn together by means of a large iron needle (*tasugla*, or *tasubla*) (cf. Fig. 220b) and a thread which is also cut from camel's hide. The wooden saddle frame is attached to three cushions. These cushions are generally made of goat-skin or sheep-skin stuffed with hay or with date palm bast, but may also be plaited from leaves of the date palm tree. Cushions made from goat-skin are sewn together with strips of the same material by means of the little awl known as *tistent* (cf. Fig. 218a). The two long cushions resting lengthwise upon the animals back are known as *tastek*, and the small cushion resting over the animal's back close to its shoulders is called *tafelledut*. The saddle is fixed to the donkey by two girths consisting of cords made of goat-hair. One of these cords (*tahmechart*) passes under the tail, the other (*ahayif*) is tied around the chest of the animal. This saddle type is well fitted for the transportation of burdens and in particular of water-bags, the cords of which are attached to the pommels. When the saddle is used for riding it is frequently covered with a blanket or a piece of cloth. Saddles of this type are found in all camps of the Northern Tuareg, and Lhote states that they are also found in Adrar-n-Foras and in Ayr (Lhote 1947a, p. 120). This may be so, but I have myself never seen them in the latter region where they are unknown to the *Kel Fer*

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The most dangerous African cattle disease is the rinderpest. It is known to have entered Egypt in the year 1834 from the regions around the Black Sea, and about 1890, or somewhat later, it came to Eastern Africa and to the Sudan. Rinderpest is nowadays widely found in Africa but it is rare or unknown in Northern Tuareg countries. Rinderpest is apparently very rare in the Ayr Massif and it occurs mainly south of the Massif in savannah country. The Tuareg have no remedy against this disease. It is stated by St. Croix that the Fulani of Northern Nigeria once deliberately exposed their cattle to mild rinderpest to make them immune from this disease in its more severe and dangerous form. However, this method did not work and the Fulani gave up further experiments of this kind. It is also mentioned by St. Croix that the Fulani practise a kind of vaccination against cattle pleuro-pneumonia and that this is done as follows:— A piece of infected lung is put into milk for two to three days and thereupon placed into a small opening cut under the nose-skin of the animal. The method is claimed to be effective (St. Croix 1944, p. 24 f.). Vaccination methods are also known to some of the Southern Tuareg, e.g. the *Iwillemmeden*. These people vaccinate human beings against small-pox by inserting the pus of this disease into wounds cut with a knife (Aymard 1911, p. 108), and they also vaccinate their cattle against cattle pleuro-pneumonia ("peripneumonie bovine"). They do this in much the same way as described above for the Fulani:— An infected piece of lung is placed in sour milk or in the soil for a few days, and is thereupon inserted under the skin of the forehead. Nicolas describes the method as dangerous because the infection attacks the whole forehead and also the nose-bone (Nicolas 1950a, p. 133), but two veterinary surgeons who practised among the *Iwillemmeden* of Tawa told me that they considered this kind of vaccination effective. The method is unknown among the Ayr Tuareg of the Massif where this contagious lung-disease is unknown or very rare.

I have no great knowledge of the contagious diseases in the Tuareg groups I have studied, but such diseases seem to occur comparatively rarely, and there is no veterinary surgeon attached to the French administration of Northern Tuareg countries. There is one veterinary surgeon in Agadez, but his most important field of work lies outside of the mountain massif to the south.

Among the *Kel Ferwan* Tuareg of Southern Ayr I have been told about two contagious diseases which, when they occur, may give rise to very heavy losses. One of these diseases is known to the Tuareg as *chawga*. It attacks only cows, which die very quickly, but if cattle suffering from the disease are ritually killed their meat is nevertheless considered edible. One Tuareg told me that some years ago about thirty cattle of his camp died in one day from an attack of *chawga*.

The other contagious disease I have recorded from Southern Ayr is called *tandert*. It attacks sheep and goats, and I collected the following notes about it:— The blood penetrates the animal's flesh which becomes quite red. If sheep or goats suffer from *tandert* and are ritually killed for eating, very great care must be taken in the preparation of the meat. It must be boiled until it contains no blood, and must not be eaten until it is cold and dry. It is said that if these precautions are not taken the people who eat meat from animals suffering from *tandert* will themselves become attacked by the disease, with the result that blood and pus may penetrate the skin at any part of the body. They say that a man who has eaten unboiled meat of an animal suffering from this disease with consequent infection is treated in the following way:— A species of ant more venomous than the normal small

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ants is collected and put into the millet mortar and pounded. The pounded mass of ants is then placed on the affected individual at the spot where blood and pus have penetrated the skin. The disease is characterized as very dangerous for human beings as blood and pus may emerge at any place of the body, and can, for instance, destroy an eye. The Ayr Tuareg say that they have no remedy against *tandert* when it affects their sheep and goats. The disease *tandert* can hardly be anything but anthrax. According to information from the veterinary surgeon Niels Grunnet much indicates that the contagious disease *changa* is also anthrax.

Foucauld has recorded a few contagious stock-diseases from Ahaggar:— *tarut*, a lung disease affecting cattle, goats, and camels. The lungs are filled with pus, and the animals die in four to ten days. *tehareyet*, a disease attacking sheep and goats which will die with yellow entrails. *wehhet*, a contagious disease attacking jackals, dogs and related animals which will die quickly. It is not the true rabies. *talekmet*, apparently a kind of scrofula which affects the udders of female domestic animals. These do not necessarily die from the disease but their udders may wither (Foucauld 1951–52, IV, p. 1558, 1663, III, p. 1509, 1044). Dr. Grunnet has informed me that *tarut* could be the pulmonary form of *pasteurellosis* also called *haemorrhagic septicaemia*, while *wehhet* may very well be distemper. The *talekmet* disease according to Dr. Grunnet is not easy to identify by the present information, but three conditions are possible:— 1) cow pox, 2) *actinomycosis* of the udder, and 3) *mastitis*. The Ahaggar Tuareg, like the Ayr Tuareg, do not seem to have any remedies against such contagious diseases which incidentally are rare. But there are many other stock-diseases and treatments for them.

The Ayr Tuareg have mentioned to me about thirty different names of camel diseases. The description of these diseases was frequently difficult to understand, and I noted only the following names:—

azni, that is a disease of congestion due to heat-apoplexy which is cured by bleeding with a knife or with tobacco powder put into the camel's eyes.

tadamak, an eye disease cured by cutting around the eyes and by the insertion of salt.

tchilchal, a nose disease cured in the following way:— The handle of a wooden spoon is put up through the nostril to pierce the septum, and heated butter is poured into the animal's nose.

tegfidan, a diseases which gives the camel a swollen and inflamed head. A cure is effected by cutting with a knife and by burning.

tans, a kind of chill which causes pregnant she-camels to miscarry. There is no good remedy for it, but it is normal practice to pour water over the affected animal.

tejwad, a paralysis of the hind thighs of camels. The affected animals cannot stand up. The only remedy is a very difficult operation:— A vein is opened in the hind thigs to let out a great quantity of blood. Bleeding is stopped again by sewing together the cuts, which are finally treated with fire.

tihuyak, a disease which prevents the pregnancy of mated she-camels. The remedy for this consists in cutting slices around the vagina and under the tail so that blood flows. After this operation, which I have frequently attended, it is said that she-camels will become pregnant when mated.

tuses, a disease which prevents the pregnancy of she-camels. It is treated by putting the hand and the arm deeply into the anus of the camel. I have seen it performed once, and in this particular case the she-camel became pregnant shortly afterwards. According to Dr. Grunnet this disease is very probably *corpus luteum* which is squeezed out of the ovary by the manipulation.

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

A chest disease for which the Ayr Tuareg have no particular name. It is cured by cutting two rows of small slices through the animal's skin at both sides of the fore thighs so that blood flows.

awarəz, that is swelling of the foot caused by an acacia-thorn or other pointed object. The remedy is to remove the thorn by means of knife and awl and then burn the upper side of the foot with a red-hot iron.

səfadí, that is wounds on the camel's back caused by galling of the saddle and the loads. Very many camels have such wounds which are treated by pressing out the pus, by cutting, and by burning.

ajrwad, that is scabies (*Sarcoptes scabiei* var. *Cameli*) which is extremely common. The Tuareg living around Agadez treat it in two distinct ways:— (1) an animal bone is crushed in a large mortar and the pounded mass is put into a cooking pot to be heated over the fire. A black liquid with a consistency like that of liquid butter comes out of the bone-substance after heating. It is rubbed into the skin of the infected animal. (2) Fruit of the *aboruk* tree (*Balanites aegyptiaca*) are put into a cooking pot to be heated over the fire. A black liquid comes out of the fruits after heating. This is rubbed into the skin.

Camels in Africa are considered to suffer from only three major infectious diseases (*anthrax*, *pasteurellosis*, *trypanosomiasis*), but several types of local infections can be met with.

I believe that camel diseases of Ayr and Ahaggar are not very different, but I have not collected much material on the subject in the north. I give a few additional examples from Ahaggar: *addeŋ*, that is a bunion close to the junction of leg and body of camels. The bunion is produced by rubbing of the fore thigh against the chest during walking, and some camels suffer from such bunions during long journeys. I do not know if there is any treatment for it. *gelek*, that is the swelling of camels which have drunk too much water after the consumption of salty plants; this swelling disappears by itself. *ireleŋwaken*, a nose disease which attack camels and goats. The nostrils are filled with pus so that the animals have difficulty in breathing. The treatment is burning. *ameŋwaz*, swelling of the feet which are washed with hot water. *toza*, a chest disease considered contagious. The animals lose their appetite. The remedy is burning. Dr. Grunnet thinks that it could be an oedematous form of *pasteurellosis* (*haemorrhagic septicaemia*). – For scabies the Ahaggar Tuareg seem to know several treatments. They use pounded leaves of *ahoyyaŋ* (*Cleome arabica*) and of *teluhut* (*Capparis spinosa*) added to sour milk and rubbed into the camel's skin. According to Maire, who has made use of information from Voinot, there are other treatments for scabies, namely the use of ashes of the *aferegak* plant (*Chrozophora Brocchiana*), tar extracted from the *azawa* tree (*Tamarix gallica* ssp. *nilotica*), charcoal of *turha* (*Calotropis procera*) which is pounded and mixed with butter, seeds of *tegellet* (*Colocynthis vulgaris*) which are boiled into a black oil called *akaka* (cf. Maire 1933, p. 145, 156, 172, 200). Congestion due to heat-apoplexy (*ahni*) is cured as mentioned in the case of the Ayr Tuareg.

From the above description of camel diseases and their treatment it will be seen that the Tuareg know several types of veterinary methods. In brief the veterinary techniques can be summarized under the following five items:—

(1) Treatment by the hand, e.g., *Corpus luteum* which is squeezed out of the ovary by the manipulation (cf. *sawez*, p. 120), and massage treatments which the Tuareg practise with human beings and with domestic animals.

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Fig. 92. Wooden splints (*tafasast*, pl. *tifesasin*) applied to broken legs of sheep and goats by means of a long thin cord of goat's hair. Ahaggar, the *Dag Rali* tribe. Dimensions of wooden splints: about 0.12 m. (F.M. 282).

232 (2) Operation with a knife. Such operations are often very simple. Thus I have once seen sheep with swollen throats and ears which were scratched with a knife to let out some water-like pus, but I do not know the name of this disease. The knife is used for many different operations some of which have been mentioned above. It is also used for bleeding which plays a great part in Tuareg veterinary practise. Bleeding is applied to humans and to domestic animals as a treatment for various diseases. The Tuareg may bleed individuals and animals bitten by snakes or stung by scorpions, but bleeding is used for many different diseases, as the Tuareg believe that these can be removed away with bad blood which is considered their cause. Bleeding is practised with camels. Thus in summer camels are frequently bled because they get slow and tired owing to *azni* (*ahni*), that is congestion due to heat-apoplexy, and a she-camel will normally be bled two or three hours after it has brought forth a calf. I frequently attended the bleeding of camels among the Ayr Tuareg where the method is as follows:— The camel is forced to stand upright while its head is turned downwards by a man (or a woman) who grasps the head firmly at the upper lip with one hand and pulls at a rope fixed to the animal's lower jaw with the other. A rope is tied around the camel's neck close to its chest so that the neck vein can contain as much blood as possible. The neck vein in this way will swell with blood particularly close to the animal's head at a place known to the Tuareg as *abayor*. A slice about two centimetres long is cut in this place with a small sharp knife, and immediately blood will flow from the neck vein in a thin but powerful squirt. Shortly after bleeding has started the rope tied around the animal's neck is loosened, but blood is allowed to flow for several minutes, and I believe that at least two or three litres of blood is tapped. When the operation is to end the animal's head is raised, the skin around the wound is pressed together with two fingers, and bleeding immediately ceases. Once blood has started to flow from the camel it does not protest at the operation which is illustrated by the photograph Fig. 93. When a camel has been bled it will normally rest for a few hours before it starts eating again. When Tuareg get lost in the desert and lack water, they bleed their camels and

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When Tuareg get lost in the desert and lack water, they bleed their camels and drink the blood (cf. p. 235). In situations of great distress they may also kill their camels in order to obtain the water supply conserved in the animal's stomach.

(3) Treatment by burning. Wounds are cauterized by means of a redhot iron known as *tamak* (Ayr), or *tasterkemt* (Ahaggar). Burning with a redhot iron is also practised for camels with swollen feet as already described (p. 121). It is also common to burn a line around wounds or other sites of disease in order that it shall not spread, and burning is even practised for internal diseases, as is the case with the *toza*-disease of camels (p. 121). Redhot irons are, on the whole, used particularly for camels. Wounds of sheep and goats, e.g., wounds from jackal bites, are cauterized by means of glowing camel dung. Certain stomach diseases, such as types of tympanites, are cured by a bunch of flaming grass swept under the animal's belly. I have seen this practised with donkeys which, like horses, may suffer from a kind of tympanites known in Ahaggar as *tahagd*.

(4) Instruments and bandages. Enema should be mentioned under this heading. It is known in Ahaggar as *sebegiwen*, and is applied to humans and to animals by means of a funnel or by a special apparatus made from a piece of hollow cane connected with a skin-bag. I never had the opportunity to see this apparatus, which is depicted by Lhote who also gives some information about the use of enemas with human beings (Lhote 1955a, p. 303, Fig. 36). He mentions that an enema is also given by a mother to her little children by blowing water into the anus with her mouth. I have seen this done to children in Ahaggar, but I do not know whether this method is practised with animals also. Both in Ahaggar and in Ayr the Tuareg apply wooden splints to their domestic animals with broken legs. I have seen this device only in Ahaggar where wooden splints are known as *tifesasin* (sing. *tafasast*). They are used for sheep and goats (Fig. 92), and, by the sedentary agriculturists, also for cows. The wooden splints applied to goats are sometimes replaced by a leather bandage solidly tied around the broken leg. I mention under this heading that camels bred and born in stony or mountainous countries cannot always stand the long journeys through plain and sandy deserts. Their feet suffer

Fig. 93. Tuareg bleeding a camel at the place of the neck vein known as *abayor*. Ayr, the *Imezzureg* tribe.

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Fig. 115. Negroid agriculturist (*Ḥartani*) with a hare caught in a steel-trap (*elkhemiyet*) of European type. Ahaggar.

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by many people in vassal tribes, and jackal's meat is popular as it is considered an excellent remedy against fever (cf. Nicolaisen 1961, p. 146). But there are also many Tuareg who refuse all types of game with the exception of such animals as gazelle, barbary sheep, and antelope. Some Tuareg consider hare's meat unlawful, but this, perhaps, is a conception introduced with Islam, for many people of the religious *Ineslemen* class claim that hare should not be eaten because their blood resembles that of menstruating women. The food taboos strictly followed by all noble Tuareg are older than Islam: they never eat birds, eggs, reptiles, and fish.

These rules are not traditional for vassal Tuareg, though some of them have adopted the taboos of the noble Tuareg.

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In Northern Tuareg areas two big lizzard types are found. One of them is called *agezzeram* (*dobb* in Arabic; *Uromastix acanthinurus*). This is caught and eaten by slaves, agriculturists, and by many vassals. It is frequently taken by hand, but there is also a special implement (*taskumt*, *takoḍa*) consisting of a stick provided with an iron crook for catching lizzards hiding in holes and under rocks. When vassal Tuareg are able to catch a great many *agezzeram*-lizzards they cut them up and dry them for sale on their regular trading expeditions in autumn to the sedentary agriculturists of Tidikelt (cf. p. 210). The *agezzeram*-lizzard is said to be the ancestor (the mother's brother) of the negroid blacksmiths (*Ineḍen*), because the lizzard's tail resembles a file. I do not know whether the few blacksmiths found in Northern Tuareg country eat this lizzard, but do not think they do. The lizzard is not considered very delicious, and blacksmiths have emigrated from the south where it is not generally eaten.

The other edible lizzard is named *ayata* (*Varanus* sp.). It is much bigger than the *agezzeram*-lizzard just mentioned, and its meat is excellent according to the taste of most Europeans. But this big lizzard

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is refused by noble Tuareg and in general also by vassals. One reason for this is that the Tuareg have a myth saying that the *ayata*-lizzard is the ancestor (the mother's brother) of the noble Tuareg. Some vassals claim that it is the ancestor of all true Tuareg, but this statement does not agree with mythology (cf. Benhazera 1908, p. 61). However, this lizzard is eaten mainly by slaves and by certain agriculturists, though its meat is considered a remedy against snake-bite and scorpion stings (cf. Lhote 1951a, p. 168 f.). The head of an *ayata* is considered an excellent amulet against these poisonous animals (Lhote 1951a, p. 168 f.), and the skin of this lizzard is not only utilized for the manufacture of amulet cases but also for small bags of various types (Fig. 116a).

Small animals are not necessarily killed with any particular hunting implement. The animals may be taken with the hand or killed with sticks and stones, as is the case with the hedgehog (*ékenisi, tékenisit*), which is eaten by some people, and with small rodents. Even hares can be taken with the hand when they hide in the grass or under rocks. The hunter may then approach the hare swinging one of his sandals over his head. This, it is said, makes the animals believe that it is hunted by a hawk or an eagle, and it will therefore remain stubbornly in its hiding place. Even gazelle are sometimes taken without any proper hunting weapon. Some Tuareg say that on journeys through the barren desert country in the summer they have met gazelle so exhausted from thirst that they could take these animals with their hands. Although this is rarely possible, I know Tuareg who have crept up to gazelle hiding from the sun in daytime and killed them with a stone. Finally it can be mentioned that the

Fig. 116a–b. Two small skin bags.

a. Skin bag (*abelhoʃ n ayata*) made from the skin of the big *ayata* lizzard (*Varanus* sp.). Ahaggar, *Harratin* of Tarhawhawt. Dimension: 0.325 m long. (N.M. G. 5834).

b. Skin bag (*abelhoʃ n timerwelt*) made from hare-skin. Ahaggar, bought from *Harratin* at Tarhawhawt, manufactured in the *Afuh-en-tehli* tribe. Dimension: 0.390 m long. (N.M. G. 5833).

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abellengad (*Reseda villosa*). Tr., L.M., U.M. Seeds of this plant are edible, but of bad taste – according to Foucauld 1951–52, I, p. 65. 222 262

abser (*Acacia Raddiana*). Tr., (L.M.). Fruits are collected mainly for goat fodder, but are eaten by human beings when vegetable food is scarce. The fruit is then crushed into flour. The resin of this acacia is also edible. 252

tamat (*Acacia seyal*). Tr. The resin (*taymwst*) is edible. I believe it is used mainly as a remedy against stomachache. This is perhaps also true of the resin of the *abser*-acacia mentioned above. 757

ahtes (*Acacia albida*). Tr., L.M. "La gousse est même comestible pour l'homme" (Maire 1933, p. 120).

ténefé (*Tephrosia leptostachya*). Tr. "Les Touareg mélangent cette plante desséchée au thé vert" (Maire 1933, p. 125). 272

lagul (*Alhagi maurorum*). Unknown in Ahaggar, but found in Tasilé-n-Ajjer. "Les racines tuberisées sont mangées par les indigènes (Killian)" (Maire 1933, p. 131).

alora (*Peganum Harmala*). Tr., L.M., U.M. An annual seed-plant. Seeds are used for *tébik*.

taburaḳ (*Balanites aegyptiaca*). Tr., L.M. A tree having edible fruits which are macerated in water to remove the bitter taste.

tedjoq (spelling according to Maire 1933, p. 241) (*Pistacia atlantica*). L.M. Very rare according to Maire (1933, p. 148). According to my own observations the fruit of this tree is eaten by Arab pastoralists (e.g., *Ulad Nail*) of the so-called *daya* region south of the Sahara Atlas. It is possible that it is also eaten by the Tuareg. 171

tahuiek (*Rhus oxyacantha*). Tr., L.M. A tree having edible fruit.

téhaḳ (*Salvadora persica*). Tr. A tree with edible fruit.

tabakat (*Ziziphus lotus* var. *Saharae*). Tr. The berries are crushed and mixed with millet flour.

ăzawa (*Tamarix gallica*). Tr., L.M. "La manne produits par ces arbres est receuillié par les indigènes qui l'emploient comme matière sucrante. (Voinot)" (Maire 1933, p. 156).

tabarekkat (*Tamarix aphylla*). Tr. "Les rameaux mannifères sont employés pour sucrer l'eau" (Maire 1933, p. 159). 263

tafeltast (*Myrtus Nivellii*). (Tr.), L.M. "Les rameaux de ce Myrte sont récoltés par les Touareg, desséchés et exportés par sac entiers au Soudan et au Mzab, avec *l'Artemisia judaica* ssp. *sahariensis*. Ces deux plantes sont utilisées comme médicaments et comme condiments" (Maire 1933, p. 162). 439 762

awkal (*Cynomorium coccineum*). Tr., L.M. A plant yielding edible roots which are dried and ground into flour (cf. Maire 1933, p. 163). 263

aséyar (*Anethum graveolens*). (Tr.), L.M., U.M. An annual plant. Its seeds are used as a spice and for adding to tea. 272

tekmezzut (*Teucrium Polium*). Tr., L.M. An annual plant used for adding to tea.

élel (*Nerium Oleander*). Tr., L.M. This plant is extremely venomous particularly so for camels, which die from eating its leaves. "La cendre de bois de *Nerium* est employée par les femmes du Tidikelt pour se faire engraisser. A cet effet elles mélangent un peu de cette cendre avec des dattes pilées et du beurre, puis absorbent ce mélange dans du leben" (Maire 1933, p. 170). 261

ayellachchem (*Solenostemma oleifolium*). Tr. A perennial plant. Its leaves are used as a substitute for tea. 272

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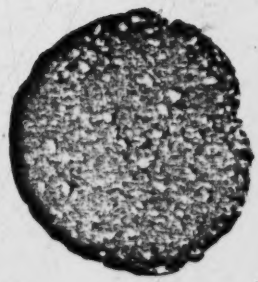

Fig. 126. A cheese-like mass of *adamam* berries (*Osyris alba*). The fresh berries are pounded in the large mortar (*tindé*) or are crushed between two stones to be formed into pieces of cheese form to be dried. This cheese-like mass of *adamam* berries is used by Tuareg women as a kind of face ointment against sun burn, pimples, and the like. They apply this ointment to the face as follows:— A little milk is poured upon a stone, the cheese-like mass of berries is rubbed against it, and the mixture of milk and berries is thereupon rubbed into the skin of the face with the fingers. Ahaggar, the *Dag Rali* tribe. Dimension: 0.075 m. (N.M. G. 5279a).

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262 *enag* (*Leptadenia pyrotechnica*). Tr. A tree with edible fruit.

[272] *tañhart* (*Mentha longifolia*). Tr., L.M. An annual plant. Used as an aromatic for adding to tea.

awit, generally known by the collective name *awihat* (*Salvia Chudaei*). Tr., (L.M.). An annual plant used as an aromatic for tea.

[824] [482] *éfelehleh* (*Hyoscyamus muticus* ssp. *falezlez*). Tr. This plant is extremely venomous for human beings, though not for animals. In the past it was used by the Tuareg as a poison for enemies. Members of La Mission Flatters (1880–81) were poisoned by the Tuareg using poison of this plant inserted into dates presented to the expedition. "La plante, absorbée à petite dose, aurait la propriété de faire engraisser. Les femmes du Tidikelt l'emploient dans ce but, en en faisant cuire une petite quantité dans de l'eau avec de la farine et de la graisse; elles laissent réduire et absorbent la bouillie obtenue, puis se couvrent pour transpirer (Voinot)" (Maire 1933, p. 192).

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252 *ahahel* (*Cistanche Phelypaea*). Tr., L.M. A plant yielding edible roots. After drying the roots are pounded in a large millet mortar to be used for bread which is much esteemed by the Tuareg. "Cette plante est recoltée jeune par les indigènes, puis placée dans le sable sous une couche de *drinn* (*Aristida pungens*) jusqu'à noircissement et dessication. Le produit sec est moulu et utilisé dans l'alimentation (Voinot)" (Maire 1933, p. 196).

éfetekchi (*Orobanche aegyptiaca* & *O. cernua*). Tr., L.M. A plant yielding edible roots.

tamzellit (*Orobanche sp.*). Tr. Very rare. A plant yielding edible roots.

tegellet (*Colocynthis vulgaris*). Tr. Seeds are eaten after boiling and drying.

alked (*Cucumis pustulatus*). Tr. Rare. Seeds are eaten after boiling and drying.

[263] *takkilt* (*Cotula cinerea*). Tr. "Les Touareg utilisent cette plante comme condiment, principalement pour la viande qui commence à se gâter" (Maire 1933, p. 209).

[439] *téhereggelé* (*Artemisia judaica* ssp. *sahariensis*). Tr., (L.M.). "Cette plante, comme le *Myrtus Nivellei*, est récoltée en grande quantité, séchée et exportée au Soudan, où elle est employée comme aromate et condiment" (Maire 1933, p. 212).

[272] *zézzeré* (*Artemisia herba alba*). (Tr.), L.M. Used as an aromatic for adding to tea.

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ajako. According to Foucauld a small annual edible plant growing in the Ahaggar Mountains at an altitude above 2000 metres (Foucauld 1951–52, II, p. 712). Maire mentions this plant as unindentified (Maire 1933, p. 263).

Collecting is mainly the task of women, but males – particularly uninitiated boys and slaves – also participate. Seed-plants are generally harvested by rubbing the ears of the plants between the fingers, but the *tulhult* grass (*Aristida pungens*) is cut with a sickle (*amreh*; Fig. 143 a–b) to be thrashed and winnowed like wheat and barley. Edible roots are frequently collected merely by hand. However, a digging stick (*élawet*; Fig. 123) provided with an iron point is also used to dig up certain wild plants such as *ahakel* (*Cistanche Phelypaea*) and similar root plants. This digging stick is characteristic of vassal women who use it for many different purposes, e.g., to make holes for tent poles.

The very best among the above mentioned seed-plants is the *tulhult* grass (*Aristida pungens*). Its seeds are collected or harvested by certain Tuareg inhabiting the lower parts of Ahaggar, but are important particularly to the Tuareg living in and around Tasilé-n-Ajjer. Within the Ahaggar Massif the most important seeds are those of *afezu* (*Panicum turgidum*) and *tawit* (*Chenopodium Vulvaria*). The right to collect these seeds is free to everybody, and Tuareg of the *Abada* zone may send their slaves to the *Atakor* zone to collect *tawit*-seeds in the mountain plateau of Asekrem. The species of *afezu* and *tawit* are sometimes protected by an ban on grazing for three and two months respectively in order that their seeds may grow ripe for collecting. The right to put a ban on grazing of the two species belongs to the Tuareg in whom territorial rights of a sub-area are vested (cf. p. 150). It is said that under very favourable conditions a single household may collect some hundred kilos of seeds of the two plants mentioned. This may seem rather impressive, but even in good years when milk is abundant collecting will not provide pastoral Tuareg of Ahaggar with sufficient vegetable food, for seeds of wild plants are far less nourishing than are grains of wheat, barley, and millet. The collecting of wild plants important for food is as dependent on climatic conditions as is stock-breeding. In dry years, when domestic animals yield little or no milk at all, there will also be no wild seeds for collecting.

Fig. 127. Very small bag known as *élem* ("skin") made from a kid's scrotum (*tigassaf*). The bag contains a piece of resin of the *tamat* acacia (*Acacia seyal*). This resin is eaten by the Tuareg as a remedy against stomachache. Ahaggar, the *Ajjer-en-tehili* tribe. Dimension of the piece of resin: 0.07 m long. (F.M. 149 a–b).

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Fig. 224. Decorated skin bag (*abelhoj*) for the conservation of tea leaves. Ahaggar, the *Aſuh-en-tehli* tribe. Dimension: 0.25 m long. (F.M. 151).

Fig. 225. Skin bag known as *aiegwigut* (pl. *aiegwiguten*). The specimen depicted is an old bag which shows that the bottom consists of a bowl plaited in coiled technique and covered with leather. New bags of this type are ornamented with leather fringes. These bags are used for the transportation of tea glasses, sugar, and the like. The correct name of such bags according to some Tuareg is *eggebankob* (pl. *eggebankobben*). Ahaggar, the *Aſuh-en-tehli* tribe. Dimension: 0.33 m high. (F.M. 80).

4/3 used to burn marks of property into camels and donkeys. The large awl may also be employed for [324] wood and horn work after heating in the fire. Horn or bone material, however, plays a little part to [757] the Tuareg. A horn implement common to all Tuareg is that depicted Fig. 230; it is used for sucking out blood of sick persons after bleeding and is widely known in the Sahara. Arm rings (sing. *ćweki*) 237 made of horn are worn by many adult men among the *Kel Aïjer*, but are rare in Ahaggar. Among the [301]

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Fig. 229. Tobacco bag (*akrâbaf*) with the bottom made from the scrotum of a goat. Ahaggar, the *Ajjah-en-tehli* tribe. Dimension: 0.22 m deep. (F.M. 94).

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Fig. 230. Piece of ox-horn (*tasfi*) to suck out blood of bled persons. Ahaggar, the *Ajjah-en-tehli* tribe. Dimension: 0.09 m. (F.M. 148).